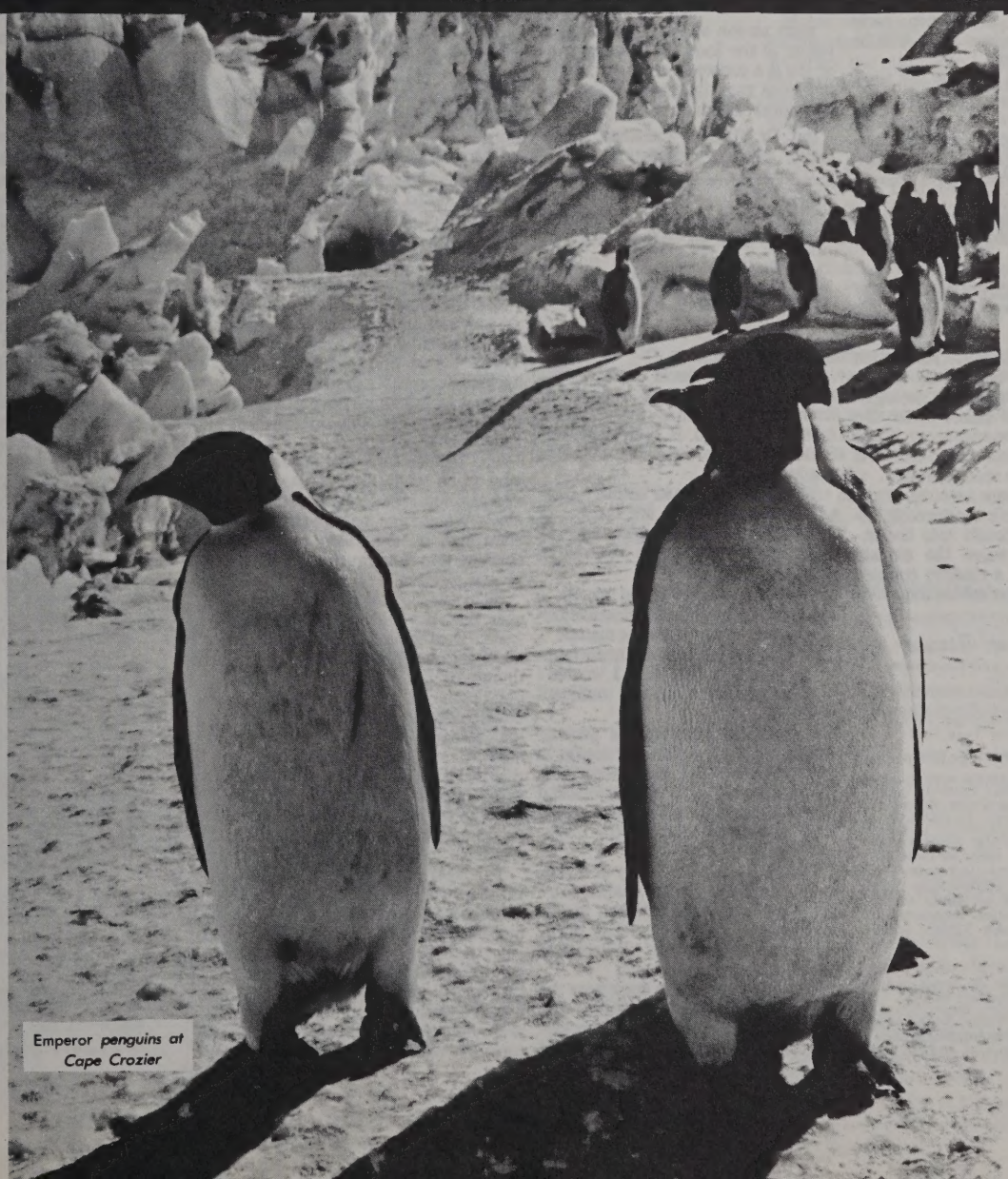
THE POLAR TIMES



Emperor *penguins at Cape Crozier*

SEASON OF ICE AND ISOLATION

18 to Endure 9 Months Living at Bottom of World

SOUTH POLE, Antarctica (UPI)—For nearly nine months, 17 men and one woman will live in isolation from the rest of the world in one of the coldest, most inhospitable places on the Earth.

Their home, America's Amundsen-Scott Pole station, rests on 9,000 feet of ice. In the middle of winter the outside temperature frequently drops below minus 100 degrees Fahrenheit.

The nearest other humans, at Russia's Vostok station, are 750 miles away.

After the last flight leaves in late February or early March, the people "wintering over" at the pole will receive no mail, food or supplies until the next plane arrives in early November. Amundsen-Scott will be totally self sufficient.

The inhabitants will live and work primarily in three two-story buildings sheltered under a 56-foot tall aluminum geodesic dome. The air under the dome is as cold as it is outside, and leaving one of the dome's buildings is like walking into a freezer locker.

The quarters inside the buildings are compact but comfortable. The library is stocked with what appear to be well-read books and often-played tapes and records. There is a pool table and a bumper pool table.

The mess hall has enough room to feed all 18 people at the same time. The food, much of it stored in the natural freezer outside, is good. There is even a soft ice cream machine.

The station's bar is well stocked and always open. And that is the root of one of the wintering over crew's problems—alcohol abuse.

Each person selected to spend the winter at the South Pole, whether he or she is a support worker or a scientist, must pass rigid medical and psychological examinations.

But Dr. Richard Cameron, a National Science Foundation science leader at the Pole, said some people with difficult personalities still squeak by the screening process.

"Certain human traits do not come out until they are in isolation," he said. "They get very irritable and become aggressive, or other persons will retreat and sleep a lot and some take up a little drinking.

"Isolation is a very interesting phenomenon. You really don't know a person until you've spent some time with him on the ice."

Dr. Steven Glenn, the station's winter doctor, said, however, that even the best-adjusted people experience periods of mild depression and boredom during the winter.

Dr. James Sears, a Navy psychiatrist, has interviewed most of the people who spent last winter at the Pole at another Antarctic station. He found that most difficulties develop around the middle of the winter.

"It's about that time when people start getting depressed and when hostilities within a group start to occur," he said. "That's usually when we start to see people withdraw a little more and start to work these things out for themselves."

Sears said when the sun begins to rise in late August, spirits start to go up.

Sears said age, maturity and solid marital relationships make it easier to adjust to the isolation of the South Pole winter.

"People coming off divorces or other broken relationships have more personal difficulties down here as a rule," he said. "And there's no doubt that younger people, those under 25, have more difficulty than people who are older."

He said the motivation of people volunteering to spend the winter at the South Pole has an important role in determining how well a person will do.

"If they want to come down to escape, if they want to come down to get away from a bad relationship, obviously that's pretty poor motivation If they want to come down for adventure, that usually is not good motivation either, because a lot of this is hard work and there's not much adventure," Sears said.

People who come to the bottom of the world to get ahead in their job and save some money should do well, he said.

The lone woman who will be spending next winter at the South Pole is Martha Kane, a 22-year-old physicist from New Providence, N.J.

She will be working on a cosmic ray research project and said she doesn't expect any problems. Dec. 24

Scientists See Danger of Ice Melting in Antarctica

TAYLOR VALLEY, Antarctica (UPI)—As water trickled by from a melting alpine glacier, geologist George H. Denton talked about the catastrophe that would occur if the climate warmed so much that the West Antarctic ice sheet melted.

There is concern among some scientists that man's accelerating release of carbon dioxide into the atmosphere could warm the climate enough to trigger a massive collapse of the ice sheet that covers almost as much area as Mexico.

Such melting would cause a rapid rise of oceans around the world, drowning low lands and flooding many ports. Dr. J. H. Mercer of Ohio State University estimates a 17-foot rise in sea level.

Whether this would actually happen, and if so, when, are matters of debate among climatologists and researchers who study the behavior of great masses of ice.

But the possibility is real enough to spark National Science Foundation-sponsored research into the matter.

"It's a problem of great importance to us," Denton said. "But I wouldn't get too alarmed about any imminent collapse."

One of the foundation's projects during the current summer season in Antarctica is aimed at understanding the past history of the expansions and contractions of the immense sheets of ice that blanket much of the frozen continent.

Denton, of the University of Maine, is heading the glacial studies, carrying out geological research in this unusual, windswept dry valley to reconstruct the history of glaciers that swept through it in the past.

Drawing diagrams in snow near the base of the 60-foot front wall of the Taylor Glacier at the head of the valley, Denton explained that the world has experienced 17 episodes of great warmth during the past 2 million years and only once has the west Antarctic ice sheet collapsed.

That happened, he said, 124,000 years ago during an interglacial period that was warmer that the one the world currently is in. And he said the warmest part of the current warm period has probably passed.

"So it looks like we have passed the danger point of this interglacial," Denton said.

The temperature was above freezing as he spoke—it was late spring and the sun was shining around the clock. Water from melting alpine glaciers high up the valley walls was draining into the gravel and sand left by past glaciers.

This was normal for this time of year. Soon it would all freeze again.

But, Denton said, the carbon dioxide situation could drastically change things.

More and more carbon dioxide is being added to the atmosphere from the increased burning of fossil fuels. Scientists believe increased carbon dioxide content in the atmosphere could cause a "greenhouse effect" by which incoming solar radiation would be trapped and the atmosphere would warm up.

The National Research Council estimated two years ago that carbon dioxide content in the atmosphere could increase four- to eight-fold in 200 years if fossil fuels become the mainstay of world energy supplies. That, the council said, could increase the average world temperature by 10 degrees Fahrenheit with polar temperatures increasing by as much as 30 degrees.

Mercer, writing in the prestigious British journal Nature, said last year that if global consumption of fossil fuels continues to grow at its present rate, atmospheric carbon dioxide content will double in 50 years.

That, he predicted, would be enough to cause a rapid deglaciation of the West Antarctic ice sheet, leading to a 17-foot rise in sea levels around the world. Dec. 24.

The Polar Times

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AUGUST HOWARD, Editor

THE POLAR TIMES highly recommends "The Polar Record," published by the Scott Polar Research Institute, Cambridge, England.

The American Polar Society was founded Nov. 29, 1934, to band together all persons interested in polar exploration. Membership dues are $2.00 a year or $5.00 for 3 years, which entitles members to receive THE POLAR TIMES twice a year.

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No. 89 *DECEMBER 1979*

Jetliner Crash Delays Bid To Retrace Byrd's Flight

By WALTER SULLIVAN

The New York Times/Nov. 29, 1979

Next to Adm. Richard E. Byrd's flights over the North Pole and across the Atlantic, it was his most ambitious venture. Fifty years ago today, he took off in a ski-equipped Ford Trimotor in a bold attempt to fly 1,600 miles from his base at Little America to the South Pole and back.

Not since 1912, when Capt. Robert F. Scott of Britain and his four companions, doomed to perish on their return march, reached the pole, had human eyes gazed on the vast, mountain-rimmed ice plateau that caps the bottom of the world. But Byrd hoped to do so from the vehicle he had helped introduce to polar exploration — the airplane.

Camped at the foot of the mountains midway between Little America, on the coast, and the South Pole was a geological party led by Dr. Laurence M. Gould, deputy leader of the expedition. That morning he had reported on the weather: "Unchanged. Perfect visibility. No clouds anywhere."

Today, Dr. Gould and others had planned to retrace the flight, taking off from the current American base at McMurdo Sound in a National Science Foundation plane. However, yesterday's crash of an Air New Zealand DC-10 reportedly delayed the trip.

Dr. Gould and his party, which includes Senator Harry F. Byrd Jr. of Virginia, a nephew of the explorer, were said to have postponed their trip because McMurdo aircraft and personnel might be needed for the crash recovery mission.

Fifty years ago, when Admiral Byrd received Dr. Gould's weather report, he handed several sealed envelopes to Charles E. Lofgren, personnel officer of the expedition. These, Byrd wrote later, were to be opened "only if no word came from us within a fixed period."

The envelopes "provided for the organization of a relief expedition, the allocation of responsibility, the return of part of the expedition to the United States and the messages a thoughtful man must leave behind before undertaking such a flight."

No emergency measures were necessary, though. During the flight to the pole, the plane swooped down over Dr. Gould's camp to parachute a package of aerial photographs, and then began its climb up the Liv Glacier in a touch-and-go effort to reach the polar plateau.

According to Byrd's account, it began to appear that the plane could not clear "the hump" at the top of the glacier. They had to decide what to toss out the door: extra fuel or survival rations? They decided to jettison the food, because without the fuel they could not reach the pole.

The plane, lightened by 200 pounds, leaped upward, and the polar plateau was gained. About two hours later, the following message from Byrd was received at Little America and relayed to The New York Times, a sponsor of the expedition:

"My calculations indicate that we have reached the vicinity of the South Pole. Flying high for a survey. The airplane is in good shape, crew all well. Will soon turn north. We can see an almost limitless polar plateau. Our departure from the pole was at 1:25 A.M."

After refueling the plane at a gasoline cache near the foot of Liv Glacier, Bernt Balchen, the pilot, who later had a falling out with Byrd, landed it safely at Little America 18 hours and 37 minutes after its takeoff for the pole.

When Byrd returned from Antarctica in 1929, Congress approved his promotion to the rank of rear admiral. Much of the remainder of his life was focused on Antarctica. He led a second expedition to Little America in 1933, which, like his first, was privately financed, and then sponsored or supported further American ventures in the Antarctic. Admiral Byrd died in 1957.

The current American commitment in Antarctica, at an annual cost of $50 million, is in large part a heritage of Byrd's efforts. Earlier explorers who carried the American flag to Antarctica included Charles Wilkes, who followed the Antarctic coast for 1,500 miles in 1840 and was the first to announce the existence of the continent of Antarctica.

Senator Harry F. Byrd Jr., right, and Dr. Laurence M. Gould at Christchurch, New Zealand.

New food source

South Africa is playing a major role in international research into krill (Norwegian for whale food), a crustacean which lives in Antarctic waters and may become one of the world's major marine resources.

The Division of Sea Fisheries of the Department of Industries plans a three-week cruise to the southern ocean in March next year to research acoustic techniques of measuring krill populations. The krill cruise on the *SA Agulhas* is one of four being planned by various countries.

Tony Spencer-Smith writes in the *Sunday Tribune* krill refers to a number of planktonic crustaceans, but by far the most plentiful and most important is the shrimp-like *euphausia superba*.

Krill is so abundant that it could produce a tonnage greater than all the fishes of the world put together. South Africa is well placed geographically to exploit this resource.

Rice University's Hackerman tells of observance of 50th anniversary of Adm. Byrd's historic South Polar flight

By JIM MALONEY
Houston Post/Fri., Dec. 7.

Norman Hackerman spoke of the antarctic flight 50 years ago led by Richard E. Byrd that opened the frozen underside of the world to aviation — and talked of cancellation of of a commemorative flight because of an aviation tragedy.

The chairman of the National Science Foundation board and Rice University president said Thursday: "There was a simple commemoration with a few speeches that were short. It was held at McMurdo Station."

A flight to the pole following Byrd's route was cancelled by Hackerman when he learned on his arrival in Antarctica that 257 persons died in the crash of a DC-10 there.

THE DAY AFTER THE anniversary of the Byrd flight, on Nov. 30, the group Hackerman led did take a freight flight to the pole, but did not follow the Byrd flight route.

Of the sightseeing air trip of the ill-fated plane from New Zealand, Hackerman said, "Many of us have been concerned about the desirability of such flight, but, after all, we don't own the place. Anyone who wants to can fly around the place."

The Hackerman party (11 men) and the crew of the LC-130 Hercules that flew to the pole Nov. 30 saw the crash site of the Air New Zealand DC-10 on Mount Erbus.

"We saw straight streaks up the side of the mountain. You could see the outline of the plane with the wings all spread out. It was scattered over what looked like 600 yards and was being covered by snow," said Hackerman.

THE COMMEMORATIVE FLIGHT would have taken the National Science Foundation members and their guests from McMurdo, then along the 1,600-mile route taken by Byrd's plane. The freight flight from McMurdo to the pole covered about 800 miles.

Hackerman stressed that the Byrd flight was remarkable and tremendously difficult. There were no communications or weather forecasts. Compasses, because of the proximity of the magnetic pole, were erratic.

Also, Hackerman explained, Byrd insisted that the flight not be just a flight to the pole. The Byrd flight was a flight for science. The Ford Trimotor carried scientific and photographic equipment.

This equipment made it difficult to maintain altitude over mountains. Byrd ordered that bundles of food weighing some 200 pounds be dumped overboard.

Hackerman, who has made four trips to Antarctica, calls the continent "a great nature laboratory. It is difficult to separate adventure from science there."

About the size of Canada and the United States, it "is harsh, but delicate. Too much activity there, all of which must be done very carefully, can be upsetting."

SINCE BYRD'S EXPLORATION OF the region, the science that has been done and that will continue to be done, is very beneficial to all mankind, says Hackerman, who as NSF chairman is proud of the foundation-sponsored research work there.

Before the work of Byrd and other early scientists, about all that was known of animal life in the polar region was that whales abounded.

In the past 50 years, scientists have traced the food chains of widely varied animals, said Hackerman.

The major effects the polar regions play on the world's weather has greatly advanced the study of meteorology. Scientists working there have greatly increased man's understanding of the movement of ocean currents and air masses.

He also said there is a far better understanding of the planet's magnetic fields and charged particles entering the atmosphere because of scientific work at the South Pole.

Of the Antarctica in the next half century, Hackerman said he first hopes for an extension of the 13-country treaty that governs activity at the pole.

This treaty, signed in 1961, runs through 1991. He hopes it will be extended for at least 20 more years and possibly 30 years.

HACKERMAN IS OPTIMISTIC about the extension of the treaty, but sees a couple of potential obstacles.

One might arise if developing countries insist on becoming parties to activity at the polar region.

The other potential obstacle could come if nations attempt to press claims they may have to terrority there. "It could be nasty," Hackerman said.

Hackerman also pointed out two other problems that could crop up to cause problems down under.

The first is the Krill fishing by Japan and Russia. These tiny, shrimp-like crustaceans, hundreds of tons of which are being taken annually, are the food of many larger fish. Some of these fish then become the food of other marine life along the food chain.

What is the effect, then, of taking — or of overfishing — the Krill? the scientist asked.

HACKERMAN THINKS THE Russians and Japanese will eventually understand that it is not in their interest to continue fishing the Krill when they see other fish life decreasing.

Ronne, veteran polar explorer, comes out of the cold

By QUINCY DADISMAN

FINN RONNE is the last of his kind — a polar explorer who skied across hundreds of miles of previously unexplorered frozen wastes behind a dog team, and the first of a new breed, the airborne explorer of today.

In "Antarctica, My Destiny" (Hastings House, $12.95), Ronne, now in his mid-70s, recalls nine trips to the frozen continent in which he traveled farther by dogsled and discovered more territory than any explorer before or since.

His name reached Antarctica long before he did. His father, Martin Ronne, had accompanied Roald Amundsen's 1911 expedition that was the first to reach the South Pole. Martin Ronne, a sailmaker, made the tent that Amundsen left at the pole. Finn Ronne's proudest memory is of a leather strap in the tent. On it, his father had tooled the names of his wife, two daughters and five sons, including Finn.

LATER, MARTIN Ronne accompanied the (Adm. Richard E.) Byrd Antarctic expedition in 1928. Finn Ronne also found his own name scribbled by his father over the older man's bunk at Little America when he arrived there as a member of Byrd's 1934 expedition.

Born in Norway, Finn Ronne came to the United States in 1923 to work as an engineer in Pittsburgh. He was invited to make his first trip to Antarctica because Byrd needed an expert skier and dog handler. He entered the Navy during World War II and headed his own expedition to the Palmer Peninsula — the "neck of Antarctica" that stretches toward South America — in 1946-'48.

His wife, Edith, accompanied that expedition as a writer and became the first woman to set foot on the Antarctic continent. Later, the Ronnes became the first couple to reach the South Pole when they flew to the United States station there in 1961 for the 50th anniversary of Amundsen's journey.

Like all polar explorers, he finds reason to fault, and praise, other explorers and lays his findings on the line.

MILWAUKEE SENTINEL

American Polar Society

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The Polar Times

Winter 1980

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DR. LAURENCE M. GOULD, 1969
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POLAR TIMES No. 89

Dear Member:

With great sorrow we announce the unexpected death on January 12th of Capt. Finn Ronne. He was 80 years old. He had served as a Vice-President since Jan. 15, 1949 and was made an Honorary Member Feb. 6, 1960. An obituary will appear in the June 1980 "POLAR TIMES".

Rear Admiral Richard B. Black of Woodbridge, Va., was presented a scroll of Honorary Membership on Nov. 29th at the Society's 45th anniversary meeting at The New York Times. Page 5 has a report.

We need the closest cooperation of all members if we are to keep the Society moving forward and continue our dues at $2.00 a year or $5.00 for three years. Printing and mailing costs continue to rise. Encourage your friends to join. Gift memberships also accepted.

An enclosed membership renewal card and return envelope means your dues are now payable. Please renew PROMPTLY and help avoid extra work and expense. Be sure we have your correct address.

Now is the time to order and pay for back issues of THE POLAR TIMES. Two issues published each year. We can supply most issues from Dec. 1941 to Dec. 1947 and June 1955 through Dec. 1973 at 50 cents each; issues since June 1974 at $1.00 each.

Please send the Secretary polar articles and clippings for possible reprinting in THE POLAR TIMES, bearing lightly in pencil name and date of publication. Two copies are needed if printed on both sides.

We welcome your comments and suggestions. Thank you for your continued interest and support.

Sincerely,

Ned Ostenso,
President

ADMIRAL BLACK HONORED

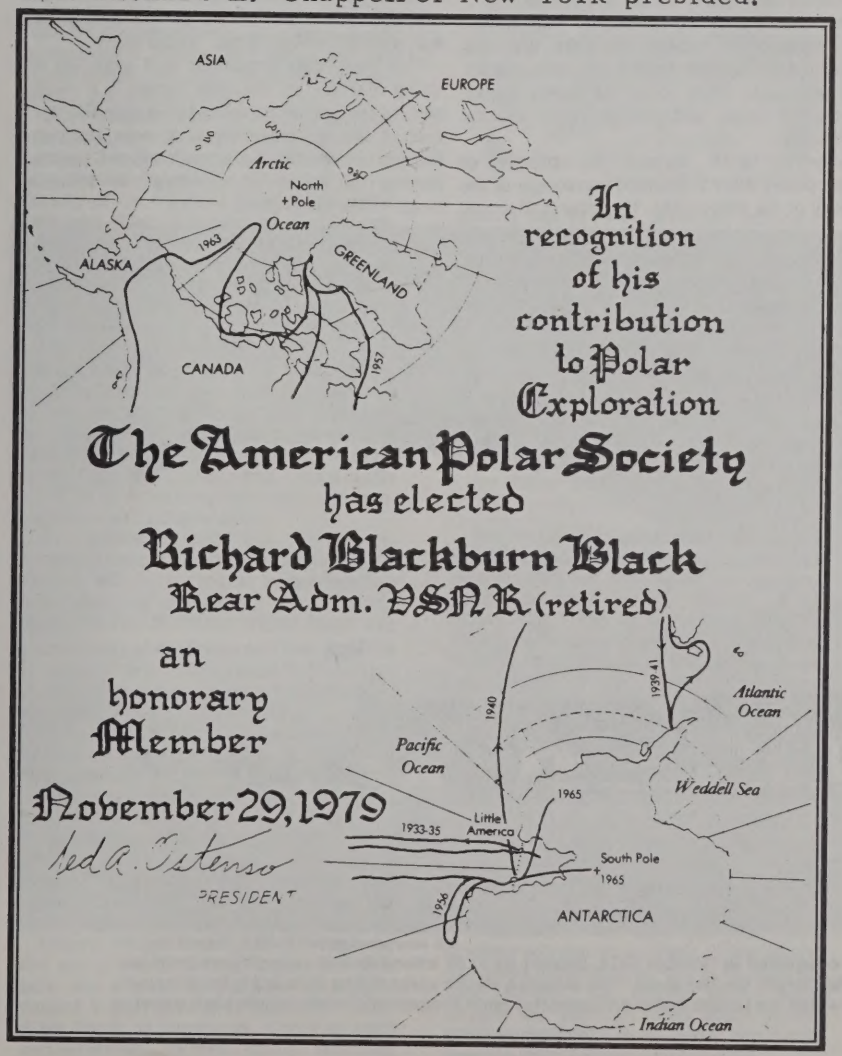
The 45th anniversary meeting of the American Polar Society was held at The New York Times on Nov. 29th. The officers and Board of Governors conferred Honorary Membership upon Rear Admiral Richard B. Black, USNR, (Ret.) of Woodbridge, Va., for his outstanding contributions to polar exploration.

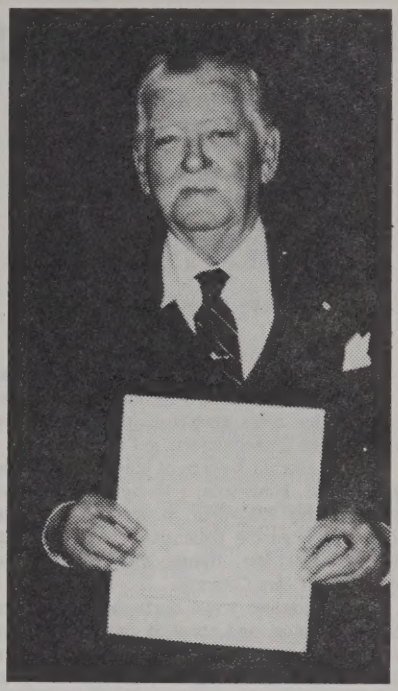
The Society's President, Dr. Ned A. Ostenso, of Washington, D.C., presented the scroll.

Admiral Black was a surveyor and Assistant Scientist of the 2nd Byrd Antarctic Expedition in 1933-35. In 1939-41 he commanded the East Base of the U.S. Antarctic Service Expedition on the Antarctic Peninsula from which he and his 25 men discovered and mapped 1,600 miles of new coast lines, and carried out scientific work for over a year.

The meeting also marked the 50th anniversary of Commander Richard E. Byrd's flight over the South Pole.

Malcolm W. Browne who reported from Antarctica in 1974 for The New York Times, also spoke. Vice President Richard L. Chappell of New York presided.





Rear Adm. Richard Black

Little America: Town at the End of the World

By Paul A. Carter, Columbia University Press, 301 pages, $15.95.

History often remembers explorers as much for the images they projected as for their actual scientific accomplishments. For most Antarctic buffs, for instance, Capt. Robert Falcon Scott will always be the supreme symbol of exploration on the White Continent, despite his shortcomings as a polar explorer (including his refusal to use sled dogs as meat), which brought death to himself and his four companions as they tried to return from the South Pole in 1912.

In 1929, long after the great pioneering era in Antarctica, Adm. Richard E. Byrd led an expedition to establish Little America, the first American encampment on the White Continent. Fifty years ago, one of Byrd's airplanes with the admiral on board (not as the pilot) made history by becoming the first aircraft to fly over the South Pole. With these accomplishments behind him, Byrd claimed some of the luster of the Scott tradition as his own.

One of the many merits of Mr. Carter's book is the way it sorts out image from accomplishment, highlighting the genuine dangers, courage and successes of Byrd's flight and the team at Little America.

Mr. Carter's descriptions of camp life in the early years draw heavily from the recollections of Laurence M. Gould, Byrd's second in command, and other surviving team members. The personal interactions of the explorers as they struggled for scientific knowledge in the face of Antarctica's deadly Mars-like climate make for fascinating reading.

MALCOLM W. BROWNE

Expedition to Antarctica's Ellsworth mountains

By David Hume

The Christian Science Monitor
St. Paul, Minnesota

This coming Southern Hemisphere summer, one of the most ambitious expeditions ever mounted in Antarctica will get under way.

Led by Gerald Webers of Macalester College in St. Paul, Minnesota, a 55-member team will explore the Ellsworth Mountains, a rugged chain between the polar plateau of West Antarctica and the Ronne and Filchner ice shelves, for three months.

The mountains trend north-south, are some 200 miles long, and about 55 miles wide. They are divided into a northern range, the Sentinel, and a southern range, the Heritage. They are the highest mountains in Antarctica, reaching elevations of more than 17,000 feet.

"There are not many areas in the world that are unexplored," Dr. Webers said, "and the Ellsworth Mountains are also an outstanding site. They have reliefs that are twice the size of the Tetons. They are also unbelievably beautiful."

According to Dr. Webers, the Ellsworth Mountains area is rich in fossils and geological information. Once a warm, tropical land, millions of years ago Antarctica was connected to South America, Africa, and Australia. Later it broke off and drifted to the South Pole.

Fossils of snail ancestors

In the Ellsworth Mountains area, Dr. Webers has found 520 million-year-old fossils of animals that were the ancestors of snails and clams. He also has found tropical plant fossils that are between 300 million and 350 million years old.

Although Antarctica is now one of the coldest spots on earth, the Webers expedition will take place during the austral (southern) summer – a time when temperatures will range between a "warm" zero to 35 degrees F.

The expedition is part of a four-year study of the Ellsworth Mountains, funded by the United States' National Science Foundation, and includes a large-scale helicopter-supported operation involving a core group of 19 geologists, plus associated scientific groups.

Helicopter support of the field parties is necessary because of the inaccessibility of many areas. It is estimated that between 350 and 500 helicopter hours will be needed for support, to be provided by three twin-jet helicopters from the US Naval Support Force Antarctica.

The core group of geologists will include four Macalester College students and distinguished professors from other universities, plus geologists from West Germany, Japan, the Soviet Union, and possibly New Zealand and Norway.

According to Dr. Webers, the objective of the proposed study is detailed knowledge of the geology of the Ellsworths. The information will provide a basis for understanding the geological relationship of the mountains to the rest of Antarctica and the world.

"It will be professionally very rewarding, because it's a chance to do something unusual and to make a contribution," Dr. Webers said.

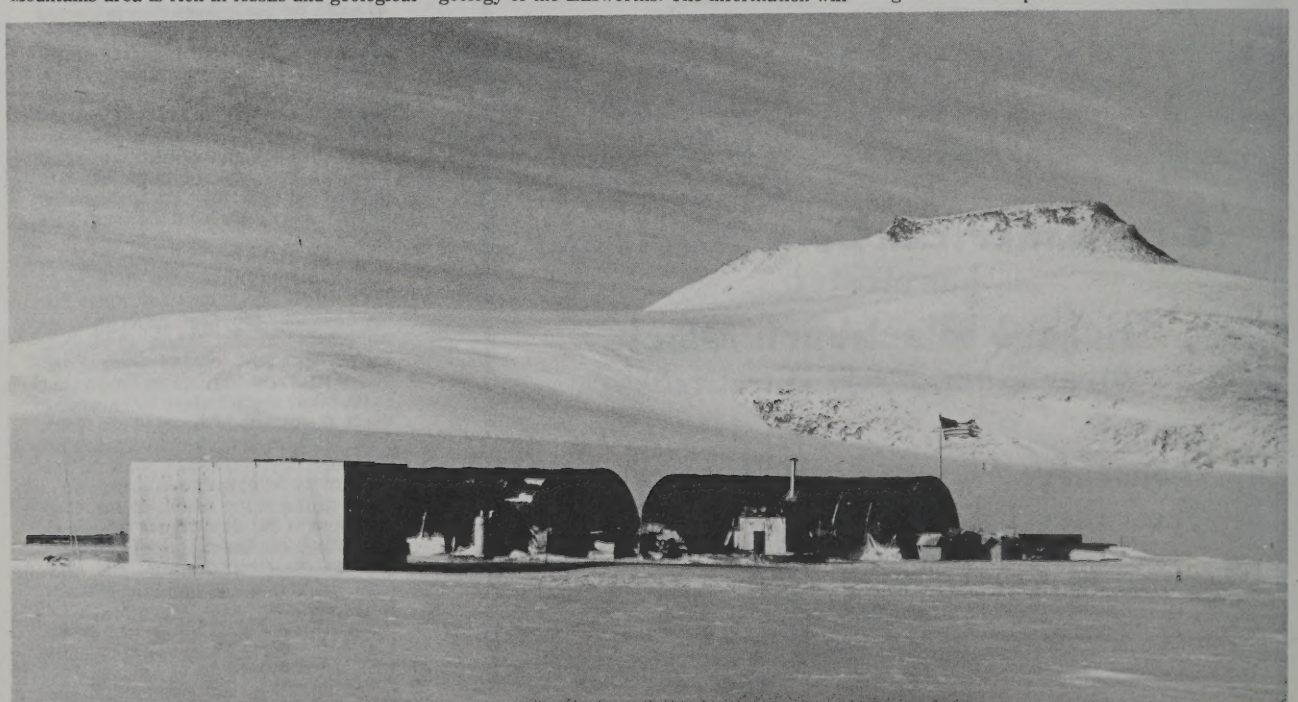
List of question areas

Since 1959, the Universities of Minnesota and Wisconsin have sent a number of expeditions to Antarctica as part of a continuing program of exploration. Three of those expeditions investigated the geology of the Ellsworths on a reconnaissance basis. But major problems remain partly or completely unsolved, according to Dr. Webers.

"We now know, because of the extensive reconnaissance work already done, what the remaining problems are, what kinds of data are needed to solve them, and which areas of the Ellsworth Mountains are best suited to reveal this information," he said.

Dr. Webers has been a geologist (paleontologist-stratigrapher) in three expeditions to Antarctica and has extensively mapped the Ellsworth, Jones, and Whitemore Mountains. In 1962, he received the Antarctica Service Medal from the federal government as a tribute to his explorations. A low range in the Ellsworths was named "Webers Peak" in his honor.

The 55-member expedition will work out of Camp Macalester, the base camp. It is being built in the northern end of the Balish Glacier, east of the Welcome Nunatak, near the confluence of the Minnesota and Gowan Glaciers, placing the entire area within the 100-mile range of the helicopters.



U.S. Navy photo (90014-10-78) by Frank R. Bair, Jr.

Darwin Glacier camp, shown here partially completed in October 1978, housed up to 58 scientists and support personnel last season during an examination of the Byrd and Darwin Glacier areas. This season a similar camp will be installed in the Ellsworth Mountains. Major field camps are one way in which the United States Antarctic Research Program stretches logistics in support of scientific investigations.

Algae Are Found Thriving Under Lake Ice in Antarctic

By JOHN NOBLE WILFORD
The New York Times

Divers exploring for the first time the under-ice environment of two freshwater lakes in Antarctica have discovered algae growing near the bottom that thrive on less sunlight than any other known plants, the National Science Foundation has announced.

The algae, colored pinkish-orange, were found growing in vast mats about 20 feet beneath the lakes' permanent ice covers, which are some 18 feet thick. The light that filters down to those depths is less than one-tenth of 1 percent of sunlight on the surface. Hardy as they are, most algae do not grow where light levels are below about 1 percent of surface levels.

Moreover, the Antarctic lake algae survive eight months of darkness and twilight each year, when there is even less light for photosynthesis, the vital and still incompletely understood processes by which plants use sunlight to convert nutrients into living tissue.

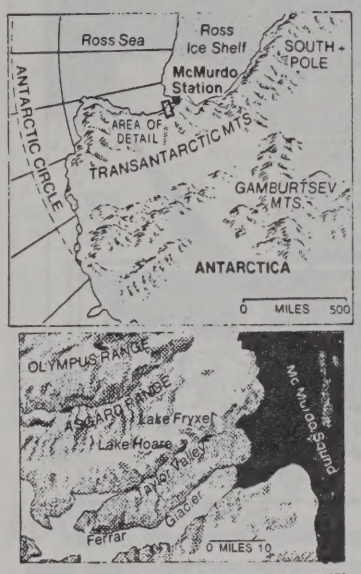
The scientists who made the discovery are Dr. Bruce C. Parker, a professor of botany, and Dr. George M. Simmons Jr., a professor of zoology. Both are on the faculty of the Virginia Polytechnic Institute and State University, Blacksburg. They conducted their explorations during the last austral summer — when it was winter in the Northern Hemisphere — under the auspices of the National Science Foundation.

"What we have discovered," Dr. Parker said, "is a totally new community of organisms that have somehow adapted to living in very little light in a brief seasonal period of growth beneath a permanent ice cover. It may be that algae mats represent life that has maximally adapted to extremely low light and temperatures at the same time."

Dr. Simmons said that further research in the next austral summer in Antarctica will be aimed at understanding how these tiny organisms "can adapt to the darnedest habitats, where there are four months of darkness and four months of twilight, and still manage to photosynthesize light and cycle nutrients and keep an incredible ecosystem going."

Their work is part of a continuing effort to explore the nature of the ice-covered lakes found in Antarctica's dry valleys — so called because they are barren of ice or snow — where life exists under the most hostile conditions on earth. A few years ago, Dr. Parker was surprised to discover lichens, fungi, bacteria and algae in the lakes, and he found that the water was unusually rich in oxygen.

Indeed, when divers broke through the ice, using steam to melt a six-foot-wide hole, the release of the pent-up oxygen caused a fizzing sound, as when a soft-drink bottle is uncapped. Water at such temperatures, barely above freezing,



The New York Times / July 25, 1979

usually has 12 to 14 parts per million of oxygen. In November, Dr. Simmons said, the level was 20 to 25 parts per million, and in January, after a more extensive period of summer light, the oxygen saturation was about 40 parts per million.

Lakes Lie in Mountainous Area

The two lakes probed by the divers are Lake Fryxell and Lake Hoare, situated in a mountainous region about 65 miles west of McMurdo Station, the principal American scientific outpost on the continent. Lake Hoare is at least 100 feet deep and Lake Fryxell, 50 feet.

Led by Dr. Simmons, the divers, wearing thick neoprene wetsuits, took the first photographs of the under-ice environment and brought up samples of the algae. The lakes were so cold that the divers could stay underwater for only 15 to 20 minutes at a time, but visibility was good, about 50 feet. The divers quickly spotted the mats of algae spread out through the water, as Dr. Simmons said, like a carpet two or three inches thick.

In November, the mats were observed to be relatively flat and closely attached to the bottom. In January, however, the plants were pulling away from the rocks, some of them forming columns that Dr. Parker likened to pinkish-orange stalagmites.

"We think the algae in the mats produce oxygen as a result of the photosynthesis generated by the little sunlight they receive," Dr. Parker said. "Some oxygen and perhaps other gases apparently accumulate in or under the mats, making them behave like balloons."

Eventually, the algae columns detach, float to the undersurface of the ice and freeze in it. Over possibly five years, the mats work their way to the surface of the ice in a freeze-dried condition, are blown far away by winds, and start life anew where they come to rest.

Dr. Simmons said that the variety of Antarctic lake algae is "a close relative" of what is known as the blue-green algae, common in waters throughout the world. The unusual coloring, he said, was presumably a "chromatic adaptation to the wavelengths of light available" under the severe conditions.

Richard W. Konter Is Dead at 97; Accompanied 2 Byrd Expeditions

The New York Times / August 30, 1979

Richard W. Konter, a former chief radioman in the Navy and a member of Adm. Richard E. Byrd's expeditions to the Arctic and the Antarctic in 1926 and 1929, died Saturday at the Veterans Administration Hospital in Fort Hamilton, Brooklyn. He was 97 years old and a lifelong resident of Brooklyn.

Mr. Konter joined the Navy in 1897 at the age of 15, and was a veteran of the Spanish-American War. From about 1930 to 1970, he led a band and a group of entertainers that performed in the New York area at children's shelters and hospitals for the chronically ill and at homes for the aged.

He is survived by his wife, the former Johanna Pool.

Q. *What causes the Aurora Borealis and the Aurora Australis?*

A. These often brilliant, multicolored displays in the night sky are also referred to, respectively, as northern lights and southern lights.

They are caused by ionized hydrogen (protons and electrons) bombarding the upper atmosphere. Various components of the atmosphere are stimulated to glow in characteristic colors.

Measurements show the hydrogen is plunging at velocities of 1,000 miles per second or more. Normally it follows the outermost closed lines of the earth's magnetic field.

Those lines enter the atmosphere in a circular zone surrounding each pole and are seen almost nightly. Fairbanks, Alaska, Fort Churchill on Hudson Bay and Thule, Greenland, lie in this zone. Following an eruption on the sun, distortion of the earth's magnetic field may push this zone as far south as Cuba.

The source of the ionized hydrogen is believed to be material magnetically trapped within the radiation belts that envelop the earth. Why and how it is accelerated to such high velocities and then released to plunge into the atmosphere is uncertain.

Q. *What is the largest animal that has ever lived?*

A. The Great Blue Whale is believed to be the largest animal that has ever lived on earth. Blue whales can be as long as 100 feet and weigh as much as 150 tons.

257 BELIEVED KILLED AS A DC-10 CRASHES ON ANTARCTIC PEAK

The New York Times

McMURDO STATION, Antarctica, Thursday, Nov. 29 — A New Zealand DC-10 on a sightseeing flight over Antarctica crashed into a 12,400-foot mountain near here yesterday, apparently killing all 257 persons aboard. Twenty of the passengers were from the United States.

The last communication with the pilot was when he radioed that that he was descending from his 10,000-foot altitude to 2,000 feet, presumably so that his passengers could get a closer look at Mount Erebus, an active volcano. The wreckage was found about 1,500 feet from the base of the mountain.

The cause of the crash, one of the worst in aviation history, was not known.

No Sign of Life Found

[Three New Zealand mountain climbers who visited the crash site by helicopter said there were no signs of life, The Associated Press reported from Auckland, New Zealand. They said the tail section of the jetliner was intact but empty.]

Mount Erebus is on Ross Island, off the Antarctic coast, about 30 miles north of the United States military and scientific station here at McMurdo Sound. The crash site was discovered after a seven-hour search by a Navy Hercules C-130.

Air New Zealand reported that its DC-10 sightseeing plane had 237 passengers and a crew of 20. There were 181 New Zealand passengers. Besides the 20 from the United States, the airline listed 24 passengers from Japan, seven from Britain, two from Canada and one each from Australia, Switzerland and France.

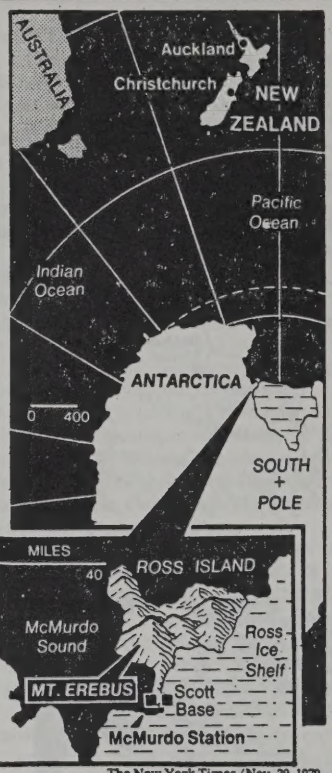
The plane took off from Auckland, New Zealand, at 8:21 A.M. local time for a nonstop flight that was to have ended in Christchurch at about 5 P.M. Passengers paid $359 each for the trip.

These tourist flights were begun in 1976 and have been described as a problem by both commanders here and representatives of the National Science Foundation, which coordinates an extensive scientific program in Antarctica.

Yesterday's flight was the fourth of the season.

Concern has been expressed over the lack of facilities here for dealing with any large-scale disaster.

The Air New Zealand DC-10 was about 38 miles north of here when last heard from by radio. The search was begun three and a half hours later, with the base here sending two ski-equipped Navy C-130's, a C-141 Starlifter and two Navy helicopters.



The New York Times / Nov. 29, 1979

Sightseeing jet struck Mt. Erebus

A low cloud cover in the area north of Mount Erebus hampered initial search operations. Capt. D. E. Westbrook, the commander of the Navy support force here, said rescue efforts would also be made difficult by rough terrain and strong downdrafts.

The temperature in the area was said to be about 15 degrees Fahrenheit, and there is daylight almost around the clock.

SCOTT BASE, Antarctica, Dec. 2 (Reuters) — Recovery teams today found both the flight recorder and flight-deck voice recorder of an Air New Zealand DC-10 that crashed in Antarctica on Wednesday, killing all 257 people aboard.

The director of the Antarctic division of New Zealand's Scientific and Industrial Research Department announced the recovery of the two devices shortly after rescue teams landed at Mount Erebus, where the airliner crashed on a nonstop sightseeing excursion.

The flight-deck voice recorder was discovered first, six hours after recovery workers flew to the crash site. Three hours later, the flight recorder was found. Both will be flown to the United States tomorrow for analysis. Voice recorders, if intact, contain the last 30 minutes of flight-crew conversations.

Because of a snowstorm with gale-force winds, recovery workers had to wait nearly two days at the American base at McMurdo Sound and at New Zealand's base here before flying in.

Their first tasks were to establish accommodations on the slopes of Mount Erebus to allow crash investigators to stay two or three days

NAVIGATION PROBLEM SUSPECTED IN CRASH

Flight-Data Recorder From DC-10 in Antarctica Did Not Reveal Sign of Structural Failure

By RICHARD WITKIN

The New York Times

Initial analysis of a crash-resistant flight-data recorder shows no signs of structural or mechanical failure that could have led to the crash of an Air New Zealand DC-10 jumbo jet in Antarctica on Nov. 28, American aviation officials said Dec. 10

Nor does a companion cockpit voice recorder contain any words of alarm or other crew exchanges to indicate any knowledge on their part that a crash was imminent, these sources said.

These results support the theory that the crash might have been caused by a navigation error and weather conditions that obscured the ground.

The two crash-resistant recorders, carried by all modern airliners, were recovered by teams that flew to the wreckage site from McMurdo. The so-called flight data recorder, carried in the tail, is designed to give minute-by-minute traces of more than 60 conditions, including altitude, speed, heading, engine power and gravitational stresses. The cockpit voice recorder tapes any radio transmissions, cockpit conversations or other noises in the cockpit during the last half hour of a flight.

Both devices were flown to Washington late last week for processing in the technical laboratory of the National Transportation Safety Board.

According to officials in Washington, there was a warning sound on the tape from the Ground Proximity Warning System telling the crew the plane had descended too low. But it was not immediately known at what juncture the warning sounded or whether there would have been time for the crew to react.

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90 Bodies Are Found in Antarctic At New Zealand DC-10 Wreckage

SCOTT BASE, Antarctica, Dec. 5 (Reuters) — A New Zealand spokesman said today that 90 bodies had been recovered from the mountainside where an Air New Zealand DC-10 crashed last week, killing all 257 aboard. The bodies were flown to New Zealand.

The spokesman, a represenatative of the Antarctic Division of the Department of Scientific and Industrial Research, said it was too early to know how many more bodies would be found in the snow and ice.

WHALING UNIT CURBS FACTORY SHIPS' USE

World Panel's Step Seen as Saving 10,000 Whales Annually—Ban Excludes One Category

By JOSEPH COLLINS
The New York Times

LONDON, July 11 — The International Whaling Commission, over the objections of the Soviet Union and Japan, today banned all whaling by factory ships, except for the small minke whale.

An American conservationist estimated that "this will probably save 10,000 whales a year, mostly sperm whales." Sperm whales are classed as a seriously endangered species.

The ban does not cover shore-based coastal whaling, and some experts believe that several thousand sperm whales will still be caught by this method. However, Thomas Garrett, the second-ranking members of the American delegation, said: "It just about wipes out Russian whaling." The Russians catch mainly sperm whales.

The ban was voted tonight after three days of intense negotiations in committee meetings and full sessions that, according to participants, included a good deal of horse-trading.

A United States resolution calling for a total ban on whaling was rejected in committee. After being amended by a Panamanian compromise, it finally won out, by 18 votes to 2, with 3 abstentions, in the commission's full meeting tonight.

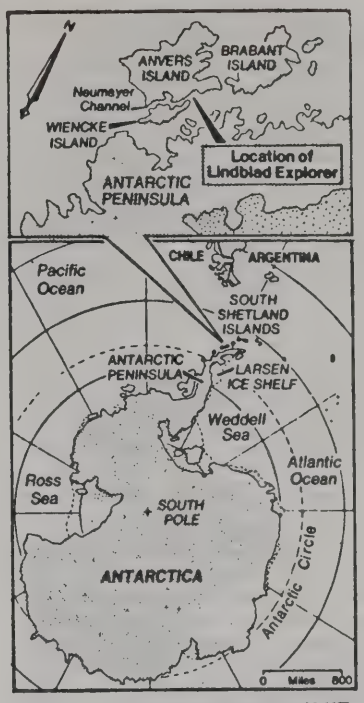
The decision is considered the biggest conservationist step the commission has taken in its 31 annual meetings. Tomorrow, the body will consider a bid by Seychelles to get a complete three-year ban on the catching of sperm whales. If this fails, the 23-member commission will probably consider the setting of annual catch quotas.

The information on which such quotas have been based in the past is increasingly distrusted by the very committees that set them, the proceedings here this week have made clear.

The annual catch of minke, or piked, whales is now about 8,000 in Antarctic waters and 2,000 in the North Atlantic. Most of them are taken by Norway, Iceland and Spain. The minkes, which are still numerous, generally are no longer than 30 feet and thus over the years have attracted minor attention from the large whaling fleets.

The Bryde and Finn species are taken mainly by Peru and Chile.

The Soviet whalers do not engage in coastal operations for minkes, and any that are caught are sold to the Japanese. Therefore, the ban on factory ships in the Southern Hemisphere and the North Pacific will, as a Soviet delegate complained after the vote, "diminish the effectiveness" of the Russian operation.



The New York Times / Dec. 26, 1979

100 Flee Vessel That Hit a Reef In the Antarctic

By SELWYN RAAB

More than 100 passengers and crew members were evacuated in lifeboats yesterday from the Lindblad Explorer, a luxury cruise ship that ran aground in Antarctica, the ship's radio operator reported last night.

The operator, reached by radio-telephone from New York, said 19 crew members remained aboard the 2,346-ton vessel, which was on a cruise to photograph the final scenes of a motion picture about the end of the world when she hit an uncharted reef off the northern tip of Antarctic Peninsula on Monday. The operator said that the passengers had been removed to a Chilean research ship, the Piloto Pardo.

He said there were no injuries and that 70 passengers had Christmas dinner aboard the Lindblad Explorer before they evacuated the ship in the cruise vessel's lifeboats.

The radio operator said that the ship was in no danger of sinking although she was listing two degrees starboard. The radio operator said the evacuation of the 70 passengers, most of whom were Japanese, and 35 crew members "went very smoothly."

"The weather was pleasant, the skies calm," he said.

According to Lars-Eric Lindblad, president of Lindblad Travel, Inc., which operates the ship, the outer hull of the double-hulled ship, was punctured when the vessel ran aground about noon on Monday. Mr. Lindblad, who said he had been in communication with the ship's crew yesterday, said water had entered the propeller shaft tunnel, but that it was being pumped out.

The radio operator said last night that water damage had been confined to the propeller shaft tunnel and had not reached the engine room.

112 From Grounded Liner Landed at Port in Chile

PUNTA ARENAS, Chile, Dec. 31 (UPI) — One hundred and twelve passengers and crew members rescued from the crippled luxury liner Lindblad Explorer, which went aground in Antarctica, landed yesterday at this port city in southern Chile.

The group arrived aboard a Chilean naval transport that rescued them six days earlier. Wearing bright orange all-weather jackets, they waved happily to several hundred people who greeted them at the dock.

The passengers, most of them members of a Japanese movie company that had been filming in the Antarctic, were immediately taken to local hotels. The Lindblad Explorer remained stranded off the northern coast of Antarctica with a skeleton crew aboard.

Soviet Explorers Report Finding Arctic Grave of Willem Barents

MOSCOW, Sept. 10 (Reuters) — Soviet explorers believe they have found the grave of Willem Barents, the 16th-century Dutch navigator, on the Arctic island where he died trying to find a northern route from Europe to China, the press agency Tass said yesterday.

The expedition found traces of a mound near Ivanov Bay on the Soviet island of Novaya Zemlya. The letters "b-a-r" on a pole stuck into the mound led the explorers to think it was Barents' grave, Tass said.

Last month, the Moscow press reported that the expedition had found remains of the navigator's ship on the same island and brought back musket bullets and planks from it.

Barents, whose name was given to the sea north of Novaya Zemlya, abandoned ship in 1597 after the vessel became stuck in ice on his third attempt to round the island. He wintered there and died soon afterward.

Q. *Why does it rarely snow in extreme cold?*

A. In extreme cold weather air is capable of holding less water than when it is warm. If there is not sufficient moisture in the air snowflakes cannot crystallize. In the extreme cold of the Arctic there is actually relatively little snowfall, and more snow blowing or drifting that gives a storm effect.

12 Britons Set Off to Circle Globe Via the North and South Poles

By R. W. APPLE Jr.
The New York Times

LONDON, Sept. 2 — A poor but proud 35-year-old baronet, one of whose ancestors commanded the Normans who invaded England in 1066, set off with 11 companions today for a three-year journey around the world the hard way: via the North and South Poles.

The band of the Welsh Guards played nautical airs, a fireboat sprayed arcs of water into the air and a small flotilla of pleasure and harbor craft followed the stubby, red-and-white flagship of the expedition, the Benjamin Bowring, as she slipped her mooring in Greenwich opposite Sir Christopher Wren's majestic Royal Naval College and headed down the Thames. Prince Charles, the patron of the voyage, was at the helm for the first leg of the trip, to Tilbury, 20 miles downriver.

Then the baronet, Sir Ranulph Twisleton-Wykeham-Fiennes, took over. He will lead the party, which includes his wife, Lady Virginia, through Europe and west Africa by Land-Rover, then by ship to Antarctica, by snowmobile across 900 miles of uncharted and forbidding Antarctic ice, by ship to Alaska, by motorized rubber rafts up the Yukon and MacKenzie Rivers and through the Northwest Passage, by ski and snowmobile over the Arctic icecap and then back to Greenwich.

If the 52,000-mile voyage is successful, it will be the first longitudinal circumnavigation of the globe, a feat comparable to Magellan's epic voyage from 1519 to 1522 and to the exploits of such British heroes as Robert Falcon Scott and Sir Francis Chichester.

The whole thing was Lady Virginia's idea, and she describes herself as "a gul lible fool" for having thought it up. But Sir Ranulph, grandson of a trooper in the Royal Canadian Mounted Police, son of an army officer killed at Monte Cassino in World War II, sees it as a chance to prove that his country has not grown soft and slack and somnolent

600 Companies Contribute

"Perhaps I was born too late," he said, "because England for me was worth living for, dying for and doing for "

More than 600 companies, most of them British, have contributed to the cost of the expedition. The Benjamin Bowring, which was used by Sir Vivian Fuchs on the only previous crossing of Antarctica, was provided by the Bowring insurance and shipping group of London and by the New York insurance firm of Marsh and McLennan. The Mobil Oil Corporation is another sponsor

In almost seven years of effort, Sir Ranulph and his colleagues persuaded donors to provide everything from a light airplane for dropping supplies at remote polar base camps, to chewing gum with which they will exercise their jaws while subsisting on mushy packaged rations. A number of companies developed new technologies for them, including ropes that fasten without knots

Along the way, the explorers will collect data on such things as poisonous snails in Timbuktu and geomagnetic sunspots at the South Pole. To repay their sponsors' generosity, the explorers will stop along the way to help promote each company's products at trade exhibitions timed to coincide with their arrival in eight cities: Paris, Barcelona, Abidjan, Cape Town, Auckland, Sydney, Los Angeles and Vancouver.

An Experienced Explorer

A tall, lean Eton graduate, Sir Ranulph is an experienced explorer, having made his way up the White Nile and probed forgotten corners of British Columbia and the Arctic. But the other members of the group are mostly amateurs, like Oliver Shepard, a former sales manager for a London brewery, and Charles Burton, a onetime army corporal who had an unsuccessful spell in the meat business in South Africa.

Those three will constitute the polar ice team, picking their way across Antarctic terrain, including a 200-mile crevasse and Arctic ice only nine millimeters thick in some places. Lady Virginia will operate the radio on which their lives will often depend

As part of their training, the expedition members took part in the grueling Welsh 3,000, a 26-mile marathon up and down mountains, wearing heavy army boots and carrying 25-pound packs. They also trained on the Greenland icecap, and three winters ago traveled across the Arctic ice to within 160 miles of the North Pole

The object of the trip is to follow as closely as possible the Greenwich meridian, the imaginary line running north and south around the world that passes through the original site of the Royal Observatory here. The line is at zero degrees longtitude, and is the point from which all other longtitudes are measured.

The ship in her new form prior to departure from London.

Life Under the Ice

Contrary to expectations, life under the ice off the north coast of Alaska does not "go to sleep" in the winter of almost perpetual darkness, a study has found. Instead, the communities of plants and animals there continue to function, according to the findings of scientists who dove under the pack ice in the coldest season of the year.

A report just released by the Department of Commerce's National Oceanic and Atmospheric Administration said it had previously been assumed that the fish larvae and other mobile forms of life moved on into deep water to become dormant during the frigid, sunless winter. In this way, it was believed, the sea life could escape the downward freezing of the ice that, drifting in the shallow coastal waters, often gouges the bottom.

Instead, the study found that the inhabitants of suitable under-ice locations "go about growing, reproducing, finding food — generally ignoring the harsh winter conditions."

The study is part of an effort to learn enough about the biology of that region to avoid damage from offshore oil exploitation.

ALASKAN HAUL ROAD TOUGH FOR TRUCKERS

But the 360-Mile Route to Pipeline Outpost Provides Travelers a View of Northern Wildlife

PRUDHOE BAY, Alaska, Oct. 6 (AP) — Since the North Slope haul road was laid in 1974, to aid construction of the trans-Alaska pipeline and supply the camps at Prudhoe, it has been a lure to the adventurous. The road is off limits to all but a few humans, but that does not keep other humans away from it.

The road is a rocky ribbon of highway that runs for 360 miles toward the Arctic Ocean, through a wildlife lover's paradise.

The 9,000 Eskimos who live on Alaska's North Slope are outnumbered by caribou, grizzlies, black bear and dall sheep; the truck drivers who use the road to haul supplies to the oilfields at Prudhoe Bay often carry bird books and binoculars.

"I've seen eider duck, trumpeter swans, ptarmigan and cranes," said Dick Wright, a trucker who gave a visitor a lift from Fairbanks through Alaska's Brooks Range.

"You see more grizzlies in the fall, and in the winter, more wolves and caribou," Mr. Wright said. "I've never heard of bears mauling anybody working on the pipeline. Dumb as people are, it's a wonder."

Some Came From Tierra del Fuego

A coalition of Eskimos and environmentalists, along with some state officials, oppose opening the road to the public. The state has refused permission to those who wanted to walk, jog, hike, bicycle and drive down the gravel road.

Some drivers, called "jeepers," drove up to Alaska from Tierra del Fuego, the southernmost area of the Western Hemisphers, and sneaked onto the haul road anyway. They arrived at Prudhoe Bay in April.

Besides trickery, the only way to get on the road is to hitch a truck ride with permission of a freight company. The visitor picked the one that employs Mr. Wright. "The road couldn't handle lots of traffic at high speed," Mr. Wright said as his truck bounced along.

According to the freight company officials, the rocky North Slope haul road literally eats tires. Mr. Wright said he averaged two flats a trip, plus an occasional window smashed by flying gravel. State officials believe that rough road conditions and the absence of any place to repair a car or truck make the road too dangerous for tourists.

The haul road begins at the old gold-mining town of Livengood, 72 miles outside Fairbanks. But the pavement stops eight miles past the Fairbanks city limits, and Fairbanks is the first and last fuel stop for the entire trip.

"We carry 545 gallons of diesel fuel," Mr. Wright said. "My last round trip used 322 gallons, but cold weather takes more fuel. In winter we use almost all of it."

More fuel is used in winter because of the problem of incomplete combustion and because motors are kept running constantly to keep the engines from freezing solid.

The road winds through rolling hills of spruce, birch and alder, a haunting wilderness where a summer sunset merges slowly into dawn and it never grows any darker than a California afternoon.

The visitor knew that the course was straight toward the Arctic Ocean, but sense of direction began to fade as the sun sank slowly in the north — then emerged, in the north, a few hours later. Winter on the North Slope brings two solid months of darkness, mid-November to mid-January.

Cold weather makes the road a sheet of ice. Arctic winds can create a wind chill factor of 100 degrees below zero. Last winter, Mr. Wright said, several drivers were trapped by a storm and had to be rescued by special arctic vehicles dispatched from Prudhoe Bay.

"There are no problems waiting unless you get hurt," he said.

The road crisscrosses the path of the trans-Alaska pipeline and passes five of its pump stations. Camps named Old Man, Prospect Creek and Cold Foot mark the route. The shabby spruce trees grew shorter and farther apart as the visitor and Mr. Wright moved north. Soon they saw a black bear waddling along the road.

"The bears love oranges," Mr. Wright said. "If there are oranges in a truck, they'll slip their paws in the handle and pull the door open. A grizzly at Chandalar pulled a windshield out to get at a sack lunch."

Wildlife is sometimes only a stone's throw — or a pistol shot — from the road. Eskimo leaders say they are worried about requests from personnel at the pipeline camps for hunting and fishing permits, and they fear increased pressure on the game supply from haul road tourists.

The Eskimo leaders say they are also angry because machinery from pipeline construction days has been abandoned at some of the camps. Piles of abandoned equipment were visible at Chandalar, a spot about three-fifths along the way where the visitor and Mr. Wright stopped for lunch.

One Hot Meal on the Ride

He and other truckers take their lunch in a mobile home, turned into a restaurant, that is the only place along the road where a hot meal is available.

The trip's most spectacular scenery began with the Brooks Range at Chandalar. The road cut through snow-capped mountain peaks unmarred by telephone polls or billboards, where dall sheep roamed. Then the mountains broke into treeless valleys and sweeping Technicolor cliffs. There isn't a tree from Atigun Pass to Prudhoe Bay, but a glance at the tundra revealed myriads of tiny plants and flowers.

The land leveled out past the Brooks Range. The land surrounding the camp at oil-producing Prudhoe Bay itself is so flat that it closely resembles an oil company camp in West Texas' treeless Permian Basin.

Twenty four hours later the visitor was slightly disappointed to find that the road stopped five miles from the Bering Sea. Since the visitor had only an hour to make a plane back to Anchorage, there was no question of seeing the seashore.

U.S. Bars Most Killing Of Walruses in Alaska

WASHINGTON, Aug.4 (UPI) — The Federal Government has ordered a halt to most hunting of the Pacific walrus in Alaska.

The Fish and Wildlife Service on Wednesday overrode a state regulation that had essentially allowed unregulated commercial and recreational hunting of the walrus.

Under the 1976 Marine Mammal Protection Act, Alaska was allowed to set up its own controls on walrus hunting. But the department revoked Alaska's permission because the state had repealed most of the hunting regulations and ended its walrus protection program on July 1.

The ban does not apply to killing walrus for native food supplies or Eskimo clothing and handicraft. Others wanting to kill or import walruses for scientific research and public display will need a Federal permit.

"The walrus is not endangered, but a lot of wasteful hunting is conducted," said Lewis Regenstein of the Fund for Animals. "Many hunters just cut off walrus heads for trophies and throw the bodies away."

Gen. William Hoge Built Alaska Highway

The New York Times / Oct. 31, 1979

Gen. William M. Hoge, who built the 1,500-mile Alaska Highway in 1942, commanded the combat unit that captured the Remagen bridge over the Rhine River in 1945 and later served as commander of all United States Army troops in postwar Europe, died Tuesday at Munson Army Hospital at Fort Leavenworth, Kan. He was 85 years old and had been retired since 1955.

Between wars General Hoge taught engineering, helped control floods on the Mississippi River, straightened sections of the Missouri, organized the Philippine Army Corps of Engineers and supervised the first postwar elections in Trieste.

Perhaps General Hoge's most stunning achievement was the construction in 1942 of the Alaska Highway, an all-weather gravel road that is 1,523 miles long, extending from Dawson Creek, British Columbia, to Fairbanks, Alaska. The $110-million engineering project, built as a supply route for military forces in Alaska and completed in eight months, was likened at the time to the digging of the Panama Canal.

Norwegian Polar Aviation History on Stamps

An international stamp exhibition will be held in Oslo June 13-22, 1980, to commemorate the 125th anniversary of the first Norwegian postage stamp. The exhibition will be held under the patronage of the Federation International de Philatelie (F. I. P.). The Norwegian Post Office and the Federation of Norwegian Philatelists feel that the geographical features and the character of Norway will help make this a unique experience for all who attend, and they invite all philatelists to participate in this world event, called *NORWEX 80.*

To help finance this event the Post Office issued a souvenir sheet comprising four postage stamps of 125, 200, 280, and 400 øre on October 5th. The subjects are derived from the history of arctic aviation. The 125 øre stamp shows a *Dornier Wal* hydroplane used by the polar explorers Amundsen and Ellsworth on their flight from Svalbard to 87° 43' North Latitude in 1925. The 200 øre stamp depicts the dirigible airship *Norge* which the explorers Amundsen, Ellsworth, and Nobile used in 1926 for their flight from Svalbard over the North Pole to Alaska. The 280 øre stamp is the Loening Air Yacht amphibian *Leiv Eiriksson.* This was Thor Solberg's plane for his 1935 flight from the USA over Canada, Greenland and Iceland to Norway. The 400 øre stamp depicts the SAS DC 7C *Reidar Viking,* which performed the first regular mail and passenger flight over the North Pole on February 24, 1957 (Oslo-Copenhagen-North Pole-Anchorage- Tokyo).

All four stamps may be obtained by sending 15 NOK (the additional 4.95 kroner will be for Norwex 80) to *Postens filatelitjeneste, Postbox 1085 Sentrum, Oslo 1, Norway.*

Those wishing further information on NORWEX 80 should write to NORWEX 80, The General Secretariat, Postboks 1043 Sentrum, Oslo 1, Norway.

News of Norway

Canadian Arctic 'Gearing Down' For the Winter

By ANDREW H. MALCOLM
The New York Times

PANGNIRTUNG, Northwest Territories — In these Arctic parts of Canada, winter is not so much a season as it is a way of life.

Thorough physical and mental preparation is required to face the rigors of the eight-month season.

The signs of approaching winter are everywhere these days. The first snow came in September. It stayed only briefly, but it set off a flurry of activities.

The banging of hammers on roofs, walls and porches was incessant as last-minute repairs and reinforcements were made. Hunting was stepped up to fill freezers for those days when the wind prohibits outdoor activities. The snowmobiles were tuned and fueled, doors and windows were recaulked. And the coats of the dogs began to thicken, the surest sign of the approaching season.

Summer, when many children fly south to visit relatives and play on that strange-feeling stuff called grass, was clearly over.

Fall is less noticed in these parts, perhaps because there are no leaves to rake, the nearest tree being about a thousand miles away. There is simply summer, when temperatures can soar to 50; winter, when minus 30 or 40 is common and the winds whip unsecured boats into nearby buildings, and two brief times at either end when the ice is poor. Those short periods are apparently particularly unsettling to residents, the police report.

The New York Times / Nov. 25, 1979

Pangnirtung, in the sub-Arctic region of Canada's Northwest Territories, is bracing for another winter.

It is during those times, with their climatic uncertainty, that the most thefts and break-ins occur.

"Your first winter up here, that's the tricky one," said Mary Ann Tolman, who is starting her third. Winter means you can chill a bottle of wine on the porch in a few minutes. But it also requires people to make adjustments — to the weather, to the nights, which last from 20 to 24 hours, and to the caution required in choosing clothing and moving around outdoors.

"You have to gear yourself down mentally," said Joe Rizzotto, the village manager of Frobisher Bay. "There are no more schedules, no more haste." Some people find themselves getting up at midnight, going to their office and working until breakfast. Others find themselves rising only to eat.

Most feel an increased need for companionship, and so "visiting" becomes a major pastime. "You might tell stories together," said Megan Wilson, who runs a weaving cooperative here. "You might sip tea together, or a group might just sit together. It doesn't really matter what, as long as you're sharing something."

Outdoors, packs of dogs run wild and occasionally attack children, with the result that dogcatchers are empowered to kill all unleashed dogs. Frozen ponds finally give children a flat surface on which to bounce balls. But sudden storms with winds up to 100 miles an hour can last for days, burying some houses in snow.

Huge ravens, driven to ingenuity by hunger, join together to tip trash barrels over or drop bags of garbage from on high. The resulting mess provides the birds with food. It also assures communities of a relentless litter problem.

Sewage pipes, where they exist, can freeze up unless they have special heating coils. Where they do not exist, households use buckets for toilets, emptying them into steel barrels by the side of the street. Special trucks are equipped with sledgehammers to break the frozen refuse into chunks for removal.

Corpses are more of a problem. Since burial in the frozen ground is out of the question, coffins are placed under a pile of rocks until the June thaw reaches down a few feet.

Alcoholism can be a real problem in some communities. In others, some people turn to books, television and clubs where members circulate videotapes of shows, educational programs and movies. While their husbands are outdoors, many women occupy themselves with handicrafts, time-passing skills that are required by some supervisors before an employee is assigned to the north.

Old Bison Offers Clues to Climate

By WALLACE TURNER

FAIRBANKS, ALASKA

GOLD MINERS working the frozen ground near here have sluiced out a partially fleshed body of a bison that is estimated to be 20,000 to 40,000 years old.

Dr. Dale Guthrie, a paleontologist, supervised the excavation of the carcass and had it placed in a cooler at the University of Alaska, which is located here, and it will be studied by scientists later.

"It is an old bull," Dr. Guthrie said, "that probably died in late winter and was scavenged slightly and then buried in the spring mud at the bottom of the valley."

Frozen ground is a fact of life in central Alaska. Houses built on permafrost areas have foundation problems, and the trans-Alaska pipeline had to be supported over much of its length on specially engineered piling to avoid the twistings that would have occurred had the pipe been buried in frozen soil which would have melted.

Dr. Guthrie said that in the first half of this century, as miners worked frozen gravel deposits for gold, they uncovered several woolly mammoth and giant bison carcasses near here. He said some carcasses, mummified in the frozen earth, have been uncovered in Siberia, but none in Alaska for several decades. The bison is the only such carcass ever preserved for study here.

The bull bison, whose horns are about 40 inches long, was found by Walter Roman, a miner working gold deposits left by a prehistoric river. The procedure in the early days of such mining was to heat water in boilers and use it to tunnel through the frozen soil to the gold-bearing strata beneath. Now high-pressure water in hoses is used to remove the mud and gravel above the gold-bearing sand.

It was in this removal process that Mr. Roman noticed a peculiar form in the wall of frozen dirt. Hooves appeared, then legs and then the head with fur and horns still intact.

Mr. Roman said that when he first saw the carcass, he was tempted to say nothing about it. He was nearing the end of removal of 100 feet of overburden above the gold pockets in the old riverbed, and was concerned that publicity might attract curious crowds that would disrupt his cleanup of the gold in the remaining days of the short summer season here.

Instead, Mr. and Mrs. Roman, operators of the Lucky Seven Mining Company notified their landlord, Dan Eagan of Alaska Gold Company, who notified the University of Alaska. Dr. Guthrie then was selected to conduct the excavation because of his background in identifying materials excavated from ancient hunters' camps in this area. The Romans earlier had found various prehistoric bones in their mining and turned them over to the university also.

Earlier this year Dr. Guthrie identified fragments of buffalo grass found in fossil ground squirrel nests as the dominant grass today of the Great Plains. The grass no longer is found in this area, and is another of the indications that a different climate existed here in the Pleistocene era.

The New York Times/Tom Snapp

Each of the giant bison's horns measures about 40 inches in length.

Also, Dr. Guthrie said, the bones of bison, woolly mammoths, horses, camels, saiga antelope, short-faced bears and lions are occasionally found in Alaska and Siberia. All are grassland animals unlike any found here now, he said.

The bull bison's stomach and contents were preserved by the centuries in the permafrost, Dr. Guthrie said. This will permit examination of the food the animal had eaten and a further determination of climatic qualities in this area in that age. The portion of the carcass that was preserved weighs about 500 pounds.

"It was this species of bison that early peoples hunted when they came to Alaska from Siberia," Dr. Guthrie said. He said the animal, which had large, stout horns, was larger than modern bison.

It lacked the heavy-hair cap of modern bison, but had two shoulder humps, each set off in contrasting black hair. Dr. Guthrie and Dr. Roger Power, also of the University of Alaska, recently found bison bones and teeth from a hunting camp near Healy, Alaska, which dated from 9,000 B.C.

The age estimate of the bison the Romans found was based on its location in the mud layers, Dr. Guthrie said. He will submit samples for radio carbon dating. He will compare notes this year with Russian scientists who have studied woolly mammoth mummies found in Siberia and then will organize a team of American scientists to study the bison carcass here next spring and summer.

Hillary distressed

NEW HAVEN (Missouri), — Everest conqueror, Sir Edmund Hillary, said he was distressed at the news of the apparent death of Peter Mulgrew.

"Peter was a friend of mine," said Sir Edmund, who is on a speaking tour of the United States.

"We went to the South Pole together in 1956 and 1958 and he was with me in the Himalayas in 1960 and 1961. He suffered pulmonary edema at 21,000 feet and later lost both feet from frostbite. But he made a remarkable recovery and went on to become a successful businessman and an international yachtsman.

Peter Mulgrew was the commentator on the flight.

Dr. Laurence Irving Dies

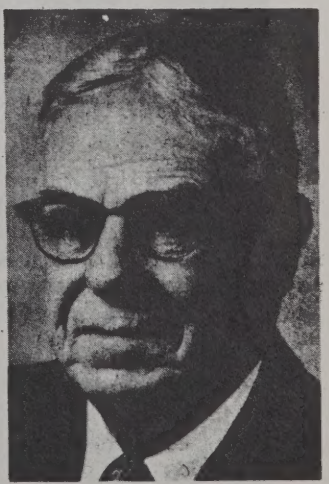
Dr. Laurence Irving, a pioneering Alaskan scientist for whom the Irving Building on the Fairbanks campus is named, died November 20 in Fairbanks. He was 84.

Irving directed the university's Institute of Arctic Biology from 1963, when it was established, until 1966. From that time until his death, he was the institute's advisory scientific director.

A physiologist and biologist who devoted many years to arctic research, Irving helped to build the university's international reputation for scientific research. He was first director of the Arctic Research Laboratory at Point Barrow, from 1948-49, and first physiologist on the staff of the Arctic Health Research Center, serving in that capacity from 1949-62, when the center was located in Anchorage.

The university conferred an honorary Doctor of Science degree on him in 1968, and in 1974 he was given the Arctic Institute of North America's Fellows Award for his "long and distinguished research in physiology of arctic life."

Irving is survived by his wife, Florence, a daughter, and two sons.



LAURENCE IRVING

Annual Alaska Seal Killings Are Praised and Denounced

By BAYARD WEBSTER

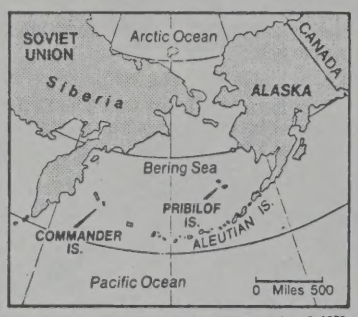
The annual United States seal-killing program on the Pribilof Islands of Alaska in the Bering Sea has come to an end to the accompaniment of kind words from two major conservation organizations and bitter criticism from a wildlife group.

The program is distinct from the much publicized harp seal program in Canada. Although less well-known, however, it is similar in approach.

The roundup of the seals, conducted in a five-week period in June and July, resulted in the killing of 25,875 northern fur seals. The roundup was restricted to 3- to 6-year-old subadult males, which were corralled and driven inland away from the main herd in small groups and killed by the Aleuts, the principal residents of the bleak, volcanic islands, St. Paul and St. George.

The slaughter of the sleek, brownish-gray male seals has been conducted since 1911 by the United States Government under the terms of an international treaty. One-fifth of the adult population of 250 on the islands takes part in the seal-harvesting.

The American operation, conducted since 1970 by the Department of Commerce, was called "an economic disaster and a biological tragedy" by William



The New York Times / Aug. 5, 1979

Clark, vice president of Friends of Animals, a New York-based organization, upon his return from witnessing the killings.

The Government method of killing the seals involves clubbing them into unconsciousness with as few blows as possible and then piercing the heart with a knife, causing instant death. The seals are then stripped of their skins. The carcasses are seldom used for food because of their high mercury content.

"The United States Government is pumping some $9 million into the islands to support a population of 650 Aleuts, to support a substantial Federal bureaucracy, and to kill seals," Mr. Clark asserted in an interview. He added that the Government received about $1.1 million annually from the sale of pelts, which are sold almost exclusively to West German furriers since there is little demand from American fur garment producers.

2 Groups Praise Method

He cited studies by biologists that indicate that the presence of dominant males was an important factor in the fathering of subsequent generations. But he said that no studies had been made of how many potential dominant males were killed each year, leaving subdominant males to sire offspring, and of the genetic effects that might result.

But despite Mr. Clark's comments, which were echoed by Alice Herrington, president of Friends of Animals, who also visited the Pribilof roundup that ended last week, two major conservation organizations reported that the operation was part of a comprehensive program that has been one of the nation's most successful conservation efforts.

The National Audubon Society noted that by 1909 the Pribilof fur seal herd had been reduced by pelagic, or open-ocean, seal hunters to a population of 134,000. Two years later, the United States, the Soviet Union, Japan and Canada signed a treaty prohibiting pelagic sealing and establishing the Pribilof Islands as a seal hunting ground to be operated by the United States. Canada and Japan were each allocated 15 percent of the kill in return for giving up their open-ocean sealing.

Quotas were set, limiting the number of seals to be slaughtered on the Pribilofs. The quota now is 30,000. Since the treaty went into effect, the Audubon Society said, the seal population has risen to 1,300,000 and has remained fairly stable.

'Well-Satisfied'

The National Wildlife Federation, the largest of the wildlife conservation groups, reported that it was "quite well-satisfied with the project."

The Commerce Department, in defending the Pribilof program, asserted that a panel of veterinarians who visited the seal-killing several years ago reported that the annual harvesting was "highly efficient and humane."

The department last week released an environmental impact statement it had prepared on the effect the renewal of the four-nation treaty, known as the Convention on Conservation of North Pacific Fur Seals, would have on Pacific fisheries, ecosystems and the Pribilof residents. The treaty comes up for renewal in 1980 and the statement recommended that it be renewed.

An observer watches thousands of seals sunning themselves on a Pribilof Island beach.

The Russians and the Japanese have been experimenting for years with the harvesting of krill to be converted into animal and human food. The Russians reportedly take an annual haul of 100 million tons, more than the total sea catch. The krill are especially abundant in Arctic waters where they are taken by fishing vessels.

Immigrant Who Traveled With Byrd Dies

In 1926 a young Greek immigrant contacted Richard E. Byrd about accompanying him on his North Pole expedition.

Byrd had first met the youth months earlier, when Epaminondas James Demas had talked with the navy officer about the educational opportunities available in his new homeland.

Impressed with the young man's verve and enthusiasm for aircraft, Byrd agreed that Demas could make the journey as a combination mess attendant and aviation mechanic.

Eight years and 12,500 miles later, at the other end of the earth, "Pete" Demas helped save Byrd's life.

Over those eight years Demas, who died in Los Angeles Nov. 17 at 74, made a total of three journeys with Byrd—the North Pole expedition in 1926 and two South Pole ventures (1928-30) and (1933-35).

At 21 Demas was the youngest member of the Byrd team when the then Navy commander made his historic 17-hour flight from Kings Bay over the North Pole.

In 1928 he helped Byrd establish Little America at the South Pole, staying there two years. It was during the second South Pole expedition (1934) that Demas and two other team members drove a tractor 123 miles to save Byrd from what they feared was carbon monoxide poisoning.

Byrd had isolated himself for several months in a tiny shack to carry out some scientific observations. After a time, Demas related, Byrd's radio messages to base began to sound disjointed. Expedition members feared that their leader was suffering from poisoning from his kerosene lamps and set out on a successful rescue mission.

Impressed with his young disciple's skills (Demas, like many of his generation, had taught himself to fly by experimenting with friends' planes in the Washington, D.C., area), Byrd asked if he would help check out a plane for a young Midwestern flyer who was planning to cross the Atlantic.

Demas would later tell friends that he was the only one at Roosevelt Field, N.Y., to greet Charles Lindbergh in 1927 when "Lucky Lindy" flew in from St. Louis.

He performed a similar task for Byrd when the explorer flew the Atlantic after Lindbergh.

Between polar expeditions Demas achieved his educational dreams by graduating from New York University and attending classes at Massachusetts Institute of Technology.

Years later Byrd, by then an admiral, named two features on the Antarctic continent for his old friend.

The "Demas Ice Tongue" and "Demas Range" are shown on current maps.

Wednesday, to mark the 50th anniversary of Byrd's first South Pole flight, a ceremony will be staged in Little America. Amid the hoopla and the speeches, two small Greek flags will be unfurled, both purchased by Demas before his death. One is to remain at the base station. The other will accompany Epaminondas James Demas' mementos home to Greece.

Canada's Inuit

Canada has issued four more 17-cent commemoratives in its continuing series portraying the way of life of the Inuit, the Eskimos of Canada, as depicted by Inuit artists. The new issue, put out in thematic se-tenant pairs for "shelter" and "community," follows 1977's ways of hunting and last year's means of travel.

All in five colors, one pictures an Inuit soapstone sculpture entitled "Five Eskimos Building an Igloo" and a companion stamp reproduces a print entitled "Summer Tent." The theme of living together is represented by soapstone figures by two Inuit artists depicting the Inuit Drum Dance and a print of a group of dancers called "The Dance."

Nasa To Magnify Aurora Borealis

Alaskans from Barrow to Ketchikan will be able to witness a series of spectacular light shows at the end of this winter during a half dozen rocket launches from the Poker Flat Research Range near Fairbanks.

The shots, part of an experiment on plasma physics next March and April, will in effect magnify the aurora borealis, according to Neal Brown, supervisor of the University of Alaska-run range 35 miles north of Fairbanks. They will be similar to the light show Alaskans statewide were able to watch last April during another project.

Tracer-type chemicals, lithium and barium, will be released from the rockets so the experimenters from the National Aeronautics and Space Administration, led by Jim Heppner of the Goddard Space Flight Center, can photograph their movement in relation to the electrical fields of the aurora borealis.

The rockets will travel 70 miles up and land some 200 miles north in the foothills of the Brooks Range about six minutes later, and the chemicals will be visible for nearly two hours, said Davis.

Eight other rocket launches are scheduled this winter for the range operated through the school's Geophysical Institute, but the supervisor said none will be visible from a great distance.

The first, set for sometime in November, is the Echo V project that scientist John Winckler of the University of Minnesota was forced to scrub last winter. In the project, high-energy electron guns will inject high-powered beams into the magnetosphere so observers can follow their motion.

The only University of Alaska project scheduled in the coming year is one next March headed by Gene Wescott. He will be studying and measuring solar energy and how it is distorted en route to Earth.

All of the projects will give "snapshot pictures" of how much ozone there is in the atmosphere between about 20 miles and 100 miles above the earth, said Brown.

"The research does not have a particular application right now, but it could relate to future problems" such as satellite communications, space stations or military launches, he said.

The six full-time employees at the research range are also preparing for Nasa's space shuttle program, which will include polar orbiting experiments, said Brown.

Poker Flat, in its 11th year of operation, is devoted primarily to studies of the aurora borealis

Arctic Lab Gets New Life

WASHINGTON — A House-Senate conference committee has approved a one-year, $6.1 million extension for the Arctic Naval Research Laboratory.

The decision came late Thursday afternoon as the congressional conferees announced what had transpired during a series of closed door sessions on the defense appropriations bill.

The House, earlier this year, had deleted funding for the laboratory and the operation would have had to shut down.

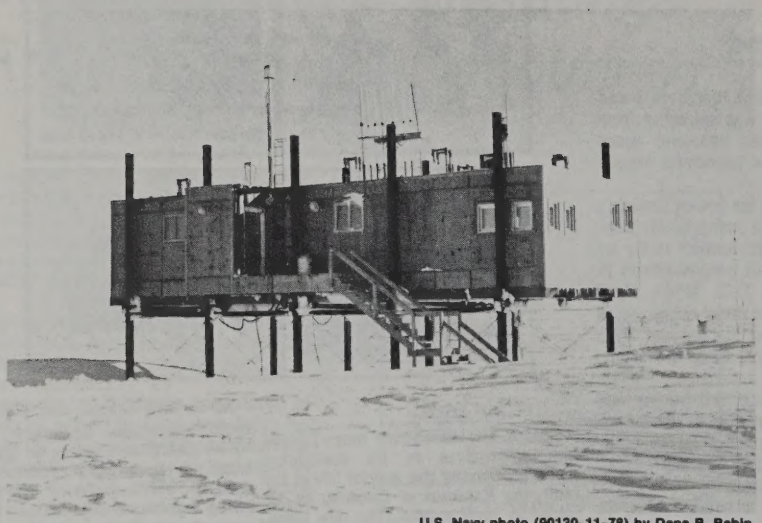
At the behest of Sen. Ted Stevens, R-Alaska and a member of the Senate Appropriations Committee, the funding level was restored.

The Senate's intent is to ask the Navy to intensify its search for a new agency to assume the responsibility for operating the laboratory. Dec. 7

Salute to Royal Geographical Society

British Antarctic Territory will salute the Royal Geographical Society with a set of six stamps slated for January or February release, advises Crown Agents Stamp Bureau, St. Nicholas House, Sutton, Surrey SM1 1EL, England.

Anthony Theobald is responsible for the designs which feature past presidents of the society, including Sir John Barrow (1835-36), 3 pence; Sir Clement Markham (1893-1904), 7p; Lord Curzon (1911-13), 11p; Sir William Goodenough (1930-33), 15p; Sir James Wordie (1951-54), 22p; and Sir Raymond Priestly (1961-63), 30p.



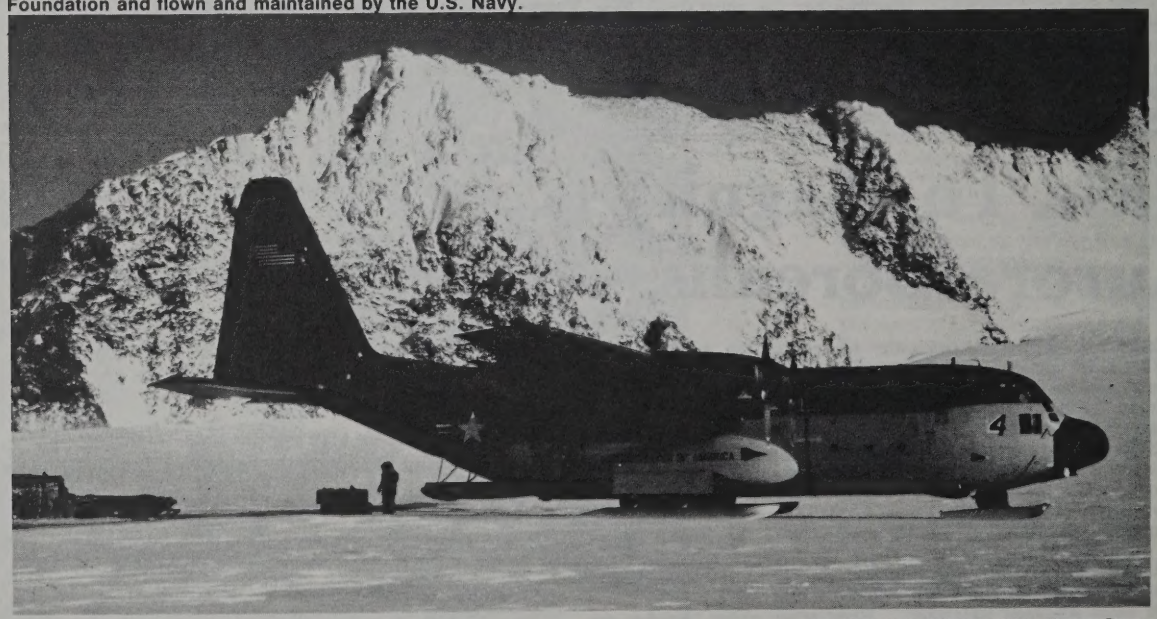
U.S. Navy photo (90130-11-78) by Dana B. Babin

Researchers will use the Clean Air Facility at South Pole Station, shown here as of November 1978, to monitor carbon dioxide, ozone, certain fluorocarbons, and aerosols in the atmosphere. Continual measurements year after year provide data for studies of long-term variations in atmospheric constituents.

U.S. Navy photo (90422-1-79)
by Michael P. Helms

Andy Brown, a New Zealand survival instructor, demonstrates rapelling on an ice cliff near Cape Evans. The survival class is given each year for personnel who will be working in the field. Rapelling is just one of the ice climbing skills taught in the course.

LC-130 Hercules airplanes, such as this one unloading cargo at Byrd Glacier in November 1978, will play a crucial part in ferrying personnel, equipment, food and fuel across Antarctica. Effective scientific investigation would be impossible without the mobility provided by air support. The LC-130 Hercules airplanes used in Antarctica are owned by the National Science Foundation and flown and maintained by the U.S. Navy.



U.S. Navy photo (90203-11-78) by Thomas Barna